a. Unbundling

The CPE Unbundling Rule. As noted above, the Commission's CPE unbundling rule requires the unbundling of "customer premises equipment used in conjunction with the interstate telecommunications network."[26] Historically, the term "interstate telecommunications network" has been thought to refer to the facilities of telephone companies. CPE, in turn, generally has been viewed as equipment that attaches to telephone-company-provided facilities. Therefore, it has been assumed that the CPE unbundling rule is applicable only to premises-based equipment used in conjunction with carrier-provided service.

The recently adopted Telecommunications Act of 1996, however, makes clear that cable systems -- like telephone companies -- are permitted to provide telecommunications services.[27] To the extent that a cable system provides interstate telecommunications services, its facilities constitute a part of the "interstate telecommunications network." The Telecommunications Act further makes clear that "equipment employed on the premises of a person . . . to originate, route, or terminate telecommunications" constitutes CPE.[28] Therefore, to the extent that premises-based equipment is used in connection with cable-system-provided telecommunication services, it is "CPE used in conjunction with the

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[26] 47 C.F.R. § 64.702(e).

[27] *See* Telecommunications Act § 303 (amending Section 621(b) of the Communications Act of 1934).

[28] *Id.* at § 3 (amending Section 3 of the Communications Act of 1934).

interstate telecommunications network." Such equipment is subject to the Commission's existing CPE unbundling rule.

Section 304 of the Telecommunications Act. Compaq recognizes that not all cable CPE will be used in connection with telecommunications services. Nonetheless, there is no need for the Commission to distinguish among categories of cable CPE.[29] In fact, Section 304 of the Telecommunications Act of 1996 *obligates* the Commission to require the unbundling of *all* cable CPE.

> Section 304 directs the Commission to:
>
> adopt regulations to assure the commercial availability to consumers of multichannel video programming and other services offered over multichannel video programming systems, of converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems, from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor.[30]

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[29] The Commission previously has recognized the difficulty of drawing distinctions among categories of customer premises equipment based on the purpose for which the equipment is used. As the Commission observed in *Computer II*:

> [A]ny given classification scheme would serve to impose an artificial, uneconomic constraint on either the design of CPE or the use to which it is put. . . . [T]he regulatory process, carriers, unregulated equipment vendors, and the public would be better served if all CPE were accorded uniform regulatory treatment.

Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry), Final Decision, 77 F.C.C.2d 384, 438 (1980) (subsequent history omitted). This aspect of the Commission's decision was affirmed by the D.C. Circuit. *See Computer and Communication Indus. Ass'n v. FCC*, 693 F.2d 198, 211 (D.C. Cir. 1982).

[30] Telecommunications Act § 304 (creating new Section 629 of the Communications Act of 1934).

According to the Conference Committee Report, this provision requires the Commission to "ensure that consumers are not forced to purchase or lease a specific, proprietary converter box, interactive device or other equipment from the cable system or network operator."[31]

Section 304 reflects Congress' long-standing goal of creating a comparable regulatory regime for cable and telephone CPE. In 1994, for example, Representative Markey, then Chairman of the Communications and Finance Subcommittee of the House Energy and Commerce Committee, observed:

> [T]here are regulations governing the telephone industry that require the unbundling of customer premises equipment. . . . Unbundling of [this] equipment . . . allowed for a flowering of manufacturing of telephone equipment for the home and the business. It separated product from service and fostered consumer choice and competition.
>
> The cable industry does not have such unbundling rules today. Both industries are converging. As both industries upgrade their networks to offer 200 or 300 or 500 or an infinite number of channels, we need to . . . us[e] the telephone company model for customer premises equipment.[32]

During the course of the 104th Congress, the drafters of the cable unbundling provision made clear that "the legislation . . . has implication far beyond cable set-top boxes."[33] Indeed, the pre-cursor to Section 304, H.R. 1275

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[31] H.R. Conf. Rep. No. 458, 104th Cong., 2d Sess. 181 (1996).

[32] *Oversight Hearing on Interactive Video Systems: Hearing Before the Subcomm. on Telecommunications and Finance of the House Comm. on Commerce,* 103d Cong., 2d Sess. (Feb. 1, 1994) (Statement of Rep. Edward Markey).

[33] *Bliley, Markey Seek Retail Sales of Cable Boxes*, Committee on Commerce, U.S. House of Representatives, Mar. 16, 1995.

-- introduced by Commerce Committee Chairman Bliley and Representative Markey -- proposed to apply unbundling requirements to all "customer premises equipment" used with "any telecommunication service."[34] This language was preserved in the House-passed telecommunications bill.[35] This provision would have required unbundling of CPE used in connection with both telephone networks *and* cable systems that provided telecommunications services.

The Conference Committee, however, chose a somewhat different approach. As adopted, the Telecommunications Act mandates unbundling of "equipment used by consumers to access . . . multichannel video programming and other services offered over multichannel video programming systems."[36] A cable system plainly is a "multichannel video programming system." The unbundling requirement thus applies to all CPE interconnected to a cable system -- regardless of whether the system is being used to access traditional one-way "multi-channel video programming" or "other services" carried over the same facilities.

At the same time, Section 304 makes clear that the comparable unbundling provisions contained in the Commission's existing CPE unbundling rule

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[34] H.R. 1275, 104th Cong., 1st Sess. § 4 (1995).

[35] *See* H.R. 1555, 104th Cong. 1st Sess. § 203 (1995). The House Commerce Committee Report specifically noted that "competition in . . . customer premises equipment is an important national goal. Competition in the manufacturing and distribution of consumer devices has always led to innovation, lower prices and higher quality." H. Rep. No. 204, 104th Cong., 1st Sess., pt.1 at 112 (1995).

[36] *See* Telecommunications Act § 304 (creating new Section 629 of the Communications Act of 1934).

will continue to apply to CPE used in connection with "basic common carrier communications service" -- such as those customarily provided by telephone networks.[37] Taken together, these provisions reflect Congress' intention to require the unbundling of *all* customer premises equipment -- regardless of whether the equipment is used in conjunction with services provided over a cable system or the telephone network.

b. Cross-Subsidization

The Commission also has authority to take any actions necessary to deter cross-subsidization of cable CPE. Section 304 of the Telecommunications Act of 1996 provides that cable system operators may sell or lease CPE to subscribers, provided that the "operator's charges to consumers for such . . . equipment are separately stated and *not subsidized* by charges for . . . service" provided by the network operator.[38] This provision plainly authorizes the Commission to adopt regulations necessary to ensure that cable operators do not use revenue from their transmission service to reduce CPE prices to artificially low levels. This would include regulations barring the sale of cable CPE at below-cost prices and any cost allocation rules cost that the Commission deems necessary to prevent cross-subsidization.[39]

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[37] *Id.*

[38] Telecommunications Act § 304 (creating new Section 629 of the Communications Act of 1934) (emphasis added).

[39] *See also* 47 U.S.C. § 543(b)(3) (authorizing the Commission to prescribe regulations that "include standards to establish, on the basis of actual cost, the price or rate for . . . installation and lease of equipment used by subscribers to receive the basic service tier . . . or other equipment as is required to access [non-basic-tier] programming.").

B. CONSUMERS SHOULD HAVE THE RIGHT TO INTERCONNECT ALL COMPETITIVELY PROVIDED CPE, SUBJECT TO A NO-HARM-TO-THE-NETWORK STANDARD

Requiring cable operators to offer CPE on an unbundled basis, free from cross-subsidization, is a necessary -- but not sufficient -- step in ensuring that consumers have access to a competitive market for cable CPE. Consumers that choose to obtain CPE from sources other than cable operators must be certain that they will be able to interconnect their equipment to the cable system on the same terms as customers that obtain their CPE from the cable operator.

Compaq believes that the Commission needs to take three actions to ensure that consumers will be able to interconnect competitively provided CPE to the network. First, the Commission should affirm that cable subscribers -- like telephone customers -- have a right to interconnect any CPE to the network, on a non-discriminatory basis, provided that the equipment does not cause technical or operational harm to the network. Second, the Commission should adopt a Part 68-like equipment registration program for cable CPE. Finally, the Commission should prescribe a standard interface between CPE and cable systems.

1. THE USER RIGHT OF INTERCONNECTION

In the *Notice*, the Commission states that, because its "current regulations do not specifically address the rights of cable subscribers to connect CPE to cable operators' facilities . . . there is some ambiguity as to whether cable operators may prohibit or limit subscribers' ability to connect CPE to [their]

facilities . . . ."[40] The Commission therefore requests comment as to whether to adopt rules, comparable to those that have long applied in the telephone market, that would expressly provide subscribers with a right of interconnection.[41]

Compaq believes that consumers already have the right -- as property owners -- to use competitively provided equipment in any lawful manner. The relevant question, for purposes of this proceeding, is whether the Commission has the authority to sanction conduct by regulated entities -- whether a telephone company or cable system -- that would infringe on consumers' property rights. The obvious answer is that the Commission does not. Ever since the D.C. Circuit's 1956 decision in *Hush-a-Phone,*[42] it has been recognized that the Commission cannot countenance practices that interfere with a telephone subscriber's "right reasonably to use his [equipment] in ways which are privately beneficial without being publicly detrimental."[43] This principle is equally applicable to network operators' efforts to restrict interconnection of customer-owned equipment to *any* transmission network -- whether telephone, cable, radio, or satellite-based.

Nonetheless, in order to remove any "ambiguity" that may exist, Compaq believes that the Commission should expressly affirm subscribers' right to

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[40] *Notice* at ¶ 67.

[41] *See id.* at ¶ 71.

[42] *See Hush-a-Phone v. FCC*, 238 F.2d 266 (D.C. Cir. 1956); *see also Use of the Carterphone Device in Message Toll Telephone Service*, 14 F.C.C.2d 571 (1968).

[43] *Hush-a-Phone*, 238 F.2d at 269.

interconnect competitively provided CPE to cable systems for any purpose that is "privately beneficial without being publicly detrimental." The Commission should further make clear, as it has in the telephony context, that the *only* acceptable reason for restricting a consumer's right of interconnection occurs when "such interconnection would be harmful to the [service provider's] operations."[44] Finally, the Commission should clarify, as it has in telephony, that cable customers must receive network interconnection of the same quality -- and on the same terms -- regardless of whether they are using network-provided or competitively provided CPE.[45]

2. PART 68 FOR CABLE

The Commission also seeks comment as to whether "an equipment registration program similar to the existing Part 68 program should be established for . . . equipment used with future services, both broadband and narrowband, to

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[44] *See AT&T Company's Proposed Tariff Revision in Tariff F.C.C. No. 263 Exempting Mebane Home Telephone Co. of North Carolina from the Obligation to Afford Customers the Option of Interconnecting Customer-Provided Equipment to Mebane's Facility: AT&T Transmittal No. 12321*, 53 F.C.C.2d 473, 477 (1975). In the cable context, "harm" may include both technical harm as well as theft of services.

[45] *See, e.g., Furnishing of Customer Premises Equipment by the Bell Operating Companies and Independent Telephone Companies*, Report and Order, 2 FCC Rcd 143, 155 (1987) (It "would be improper" for carriers "to provide superior treatment to their CPE customers in the installation and maintenance of their network services.").

ensure the integrity and reliability of these networks."[46] Compaq strongly supports such an initiative.

The Commission's Part 68 registration program is an essential part of its pro-competitive CPE policies. As noted above, the *only* legitimate basis for a network operator to deny a consumer the right to interconnect equipment is that such equipment would cause harm to the network. The Part 68 registration program, the Commission recently reiterated, facilitates the competitive provision of CPE by enabling consumers to "demonstrate that no harm to the network [will] occur as a result of attachment of their terminal . . . equipment to the network."[47] Without such a procedure, the Commission added, "manufacturers and consumers have no assurance that they can connect their terminal equipment to the network."[48]

The same principles are applicable to "terminal equipment" attached to the cable infrastructure. If subscribers' right to use the CPE of their choice is to be vindicated, and cable system operators' right to prevent harm to their network is to be protected, then the Commission must authorize a system of equipment registration.

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[46] *Notice* at ¶ 74.

[47] *Petition to Amend Part 68 of the Commission's Rules to Include Terminal Equipment Connected to Basic Rate Access Service Provided via Integrated Services Digital Network Access Technology*, Order, CC Docket No. 93-268, at ¶ 10 (rel. Jan. 24, 1996) ("*Part 68 ISDN Order*").

[48] *Id.*

3. STANDARDIZED CABLE INTERFACES

The Commission also has requested comment as to whether it should "adopt technical requirements for standard jacks and connectors for broadband or narrowband networks."[49] Compaq believes that such standards would further promote consumer choice in services and CPE.

The Commission has repeatedly recognized the benefits that standardized connectors can provide. Indeed, as the *Notice* correctly observes, Subpart F of Part 68 -- which prescribes the interface between customer premises equipment and the telephone network -- "ensures that network integrity is maintained, protects telephone company employees, facilitates the installation of equipment by non-telephone company employees, and promotes competition for inside wiring services and telephone customer premises equipment."[50]

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[49] *Notice* at ¶ 29.

[50] *Id.* at ¶ 27. The Commission also recognized the benefits that a standardized interface connector can provide in the *Part 68 ISDN Order*, adopted earlier this year. After noting that the industry-led standards process had reached broad consensus regarding an appropriate ISDN interface standard, the Commission mandated the use of an eight-position ISDN connector for CPE interconnected to carrier-provided ISDN service networks. *See Part 68 ISDN Order* at ¶¶ 11-18. The Commission specifically noted that, if different service providers were allowed to deploy different connectors, CPE "manufacturers [would] be forced to include adapters with each CPE shipment." *Id.* at ¶ 16. This, the Commission explained, would "unnecessarily increase the cost of manufacturing terminal equipment and create confusion for users." *Id.* The Commission added that the use of adapters "potentially lower[s] the reliability of ISDN . . . by creating an additional point of possible network failure in the attached equipment." *Id.*

Compaq believes that similar benefits will accrue from the establishment of a generic broadband services interface. Today, a consumer can take a PC equipped with a telephone modem anywhere in the country, connect that device to the public switched network through a standard plug, and communicate with users around the world. As the cable system becomes the conduit-of-choice for high bandwidth, time-sensitive communications, a standard interface is necessary to allow for the interconnection of devices -- such as PCs equipped with cable modems -- to the cable infrastructure.

C. THE COMMISSION'S REGULATIONS SHOULD ALLOW FOR THE DEVELOPMENT OF CPE THAT CAN INTEROPERATE WITH THE CABLE NETWORK

1. NETWORK DISCLOSURE

Allowing consumers to purchase competitively provided CPE, and to interconnect this equipment to cable networks, are essential pre-requisites to a competitive cable CPE market. In order to provide consumers with the full benefits of such a market, however, the Commission needs to adopt rules that ensure that independent manufacturers will have an equal opportunity to develop products that can interoperate with cable networks.

In the telephone market, the Commission has long recognized that, if CPE competition is to be a reality, all telephone carriers -- regardless of whether they have been classified as dominant or non-dominant -- must disclose the physical and logical interfaces to their networks. The Commission, therefore, has

long required "all carriers owning basic transmission facilities . . . [to release] all information related to network design . . . to all interested parties on the same terms and conditions, insofar as such information affects . . . the manner in which interconnected CPE operates" with the network.[51] Such disclosure, the Commission has ruled, "must be sufficiently broad in scope and defined in detail to permit offerors of CPE . . . to design . . . equipment which will be completely interoperable with the basic network."[52]

In *Computer III*, the Commission determined that -- because of the absence of competition in the local exchange -- the Bell Operating Companies ("BOCs") should be subject to more clearly defined advanced disclosure requirements. The Commission therefore requires the BOCs to publicly disclose information about network changes 12 months before the introduction of new services based on those changes. The only exception occurs when the new service can be introduced within 12 months of the so-called "make/buy" point,[53] in which case

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[51] *Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry)*, Reconsideration Order, 84 F.C.C.2d 50, 82-83 (1980). This provision has come to be known as the All-Carrier Rule. *See also* 47 C.F.R. § 68.110(b) (Carriers are required to inform customers if changes in their network "can be reasonably expected to render any customer's terminal equipment incompatible with telephone company communications facilities.").

[52] *Computer and Business Equipment Manufacturers Association Petition for Declaratory Ruling Regarding Section 64.702(d)(2) of the Commission's Rules and the Policies of the Second Computer Inquiry*, Report and Order, 93 F.C.C.2d 1226, 1238 (1983).

[53] The Commission has defined the "make/buy point" as the point at which "the carrier decides to make itself, or to procure from an unaffiliated entity, any product the design of which affects or relies on the network interface."

the disclosure must be made at the make/buy point. In no case, however, can the disclosure be made less than six months before the new service is implemented.[54] These rules are intended to promote competition in both the customer premises equipment and the enhanced services markets.

Congress has expressly recognized the importance of network disclosure. The new Telecommunications Act therefore requires the BOCs to "file with the Commission full and complete information with respect to the protocols and technical requirements for connection with and use of its telephone exchange service facilities."[55] The carriers are further required to submit "promptly" to the Commission "any material changes or planned changes . . . and the schedule for . . . such changes or planned changes."[56]

Precisely the same concerns are applicable to cable systems. At the present time, different cable systems use different transmission methods. As a result, only the cable operators -- or designated vendors selected by the cable operators -- are in a position to build cable CPE, such as set-top boxes or cable modems, that can interoperate with the cable system. If consumers are to have

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Amendment of Section 64.702 of the Commission's Rules and Regulations (Third Computer Inquiry), Phase II Order, 2 FCC Rcd 3072, 3086 (1987), *vacated on other grounds sub nom. California v. FCC*, 905 F.2d 1217 (9th Cir. 1990).

[54] *See Amendment of Section 64.702 of the Commission's Rules and Regulations (Third Computer Inquiry)*, Report and Order, 104 F.C.C.2d 958, 1083-84 (1986), *vacated on other grounds sub nom. California v. FCC*, 905 F.2d 1217 (9th Cir. 1990).

[55] Telecommunications Act § 101 (creating new Section 273(c)(1) the Communications Act of 1934).

[56] *Id.*

the benefit of a competitive market in cable CPE, it is imperative that cable system operators be subject to effective advanced disclosure requirements.

Because cable operators retain market power, Compaq believes that it would be appropriate to apply the same advanced disclosure requirements as are applicable to the Bell Operating Companies. Even if cable systems were to become subject to increasing competition, it would still be appropriate -- as in the telephone market -- to impose an "all carrier" disclosure requirement on all market participants. Such disclosure will ensure that independent manufacturers have the opportunity to develop CPE that is interoperable with any broadband system.

2. INTEROPERABILITY STANDARDS

Implementation of a network disclosure regime should be sufficient to promote interoperability in most cases. As Congress has recognized, however, it may be necessary for the Commission to adopt standards in order to achieve its goal of "commercial availability" of equipment used in connection with cable and other systems capable of delivering multi-channel video programming and other services.[57] Indeed, Congress expressly directed the Commission to "consult[] with appropriate industry standard-setting organizations" in order to achieve this goal.[58]

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[57] *Id.* at § 304 (creating new Section 629 of the Communications Act of 1934).

[58] *Id.* The Commission has recognized the importance of standards in achieving cable-CPE interoperability. Indeed, in the *Cable Compatibility Order*, the Commission stated that "[s]tandards for digital cable transmission are necessary to avoid future compatibility problems when cable systems use digital transmission methods, and to allow the mass production of economical consumer equipment that is compatible with digital cable services. . . . [S]tandardization,"

Promotion of commercial availability of the cable modem is one area that may well justify active Commission involvement in the standards-setting process. At the present time, the major cable systems are working with vendors to develop the first generation of widely available cable modems. Various cable systems, however, appear to be developing cable modems based on different transmission methods. This trend may result in cable operators becoming the sole suppliers of cable modems within their service areas. This plainly would not be in the public interest. All subscribers would be deprived of the ability to choose the cable modem that best meets their needs. Moreover, a subscriber that moved across a municipal boundary could be forced to purchase a different cable modem in order to access interactive services.

The adoption of standards governing interoperability of cable modems with cable transmission networks will allow for the creation of a national market, in which independent manufacturers are able to develop cable modems that can be used with any cable system in the country. The resulting competition doubtless will lead to increased user choice, greater innovation, and lower prices. Standardization also will permit computer manufacturers to offer consumers the convenience and efficiency of PCs equipped with cable modems, just as they now offer PCs equipped with telephone modems. This will benefit consumers by assuring

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the Commission concluded, "is needed to ensure the establishment and effective operation of a competitive market in consumer hardware and software products for connection to digital cable service." *Cable Compatibility Order*, 9 FCC Rcd at 2005.

that -- whenever and wherever they interconnect their PCs to a cable network -- their modems will be fully interoperable.

At the present time, there is considerable work on cable modem standards within the standards-setting community. This includes the IEEE 802.14 Committee, DAVIC, and the ATM Forum. However, generally accepted standards have yet to be adopted. Compaq urges the Commission to play an active role in the adoption of appropriate cable modem standards. Such a role could include participation in industry discussions, establishing deadlines for submission of standards, and -- once an industry consensus has emerged -- codifying these standards in the Commission's rules.

III. THE COMMISSION'S RULES SHOULD PROMOTE SUBSCRIBER CONTROL OVER INSIDE WIRING

Compaq urges the Commission to adopt a regulatory regime that will provide consumers with access to multiple services over competing networks. In order to achieve this goal, the Commission should ensure that cable subscribers have control over cable inside wiring, just as telephone subscribers now have control over telephone inside wiring.

To implement this approach, Compaq proposes that the Commission establish a harmonized demarcation point applicable to both telephone and cable networks, which defines all in-building wiring dedicated to a specific customer as inside wiring. Once the demarcation point has been established, the Commission should permit cable subscribers to: access and control existing cable inside wiring owned by the service provider; purchase existing cable inside wiring upon service termination; and own and control all cable inside wiring installed or substantially modified after December 31, 1997. Compaq believes that this can be accomplished while ensuring compliance with existing cable leakage and signal quality standards.

A. THE COMMISSION'S RULES SHOULD PROVIDE FOR SUBSCRIBER CONTROL OVER ALL IN-BUILDING WIRING DEDICATED TO THE SUBSCRIBER

1. COMPAQ PROPOSAL

a. DEMARCATION POINT

Compaq supports adoption of a harmonized demarcation point for all wireline networks. Specifically, for single unit residences, the Commission should extend the current telephone demarcation point -- generally located 12 inches inside the customer's premises -- to all wireline networks.[59] For multiple dwelling units, the Commission should establish a demarcation point at the location at which in-building wiring becomes dedicated to an individual subscriber's use.

In most cases, Compaq's proposal would not alter the existing telephone demarcation point. The current telephone demarcation point for most single unit residences is located inside the customer's premises. For multiple dwelling unit buildings, the current telephone demarcation point usually is located at the "minimum point of entry," generally the basement.[60] From there, each customer is served using a dedicated wire that runs into the customer's premises.[61] This wiring currently is considered to be inside wiring; it would remain so under the "dedicated use" standard.

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[59] *See* 47 C.F.R. § 68.3.

[60] *Id.*

[61] *See Notice* at ¶ 8.

Compaq's proposal would alter the current cable demarcation point. In single unit buildings, the demarcation point would be shifted from 12 inches *outside* the customer's premises to 12 inches *inside* the premises.[62] For multiple dwelling units, the change would be more significant. Cable service in multiple dwelling unit buildings generally is provided to each subscriber by transporting content through a common "feeder line" that, in turn, is connected to customer-specific "drop lines." The point of interconnection generally is a "locked box" on each floor of the building. Under current rules, all wiring more than 12 inches outside the subscriber's premises is considered to be part of the cable system. Under the "dedicated use" standard, the feeder lines still would be considered part of the cable network. The "drop lines," however, would be considered subscriber inside wiring.[63]

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[62] As noted above, *see supra* n. 16, locating the demarcation point inside the subscriber's premises does not alter the definition of customer premises equipment. All equipment on the customer's premises -- regardless of which side of the demarcation point it is located -- constitutes CPE and, therefore, is subject to the applicable unbundling rules.

[63] The "dedicate use" standard also should be applied to multiple dwelling units with "loop-through" cable wiring. In these systems, the feeder line runs into a splitter at each unit. While the feeder line continues through one of the splitter's ports to other dwelling units, a drop line runs from another port into the subscriber's premises. In such buildings, the drop line would be considered inside wire under the "dedicated use" standard. *See* Reply Comments of Liberty Cable Company, Inc., *Implementation of Cable Television Consumer Protection and Competition Act of 1992, Cable Home Wiring*, MM Docket No. 92-260, at 1-2 (filed Dec. 15, 1992).

b. SUBSCRIBER CONTROL

Once the Commission has adopted a harmonized demarcation point, it should implement a three-part regulatory regime governing subscriber control of cable inside wiring.[64]

Existing wiring: control during service period. At the present time, cable operators own and control most cable inside wiring. Compaq proposes that cable subscribers be given the same rights to control cable-system-owned cable inside wiring as telephone subscribers have to control carrier-owned inside wiring.[65] Specifically, cable subscribers should be permitted to control, rearrange, and maintain currently deployed cable inside wiring. Cable operators would continue to maintain ownership of such wiring. To the extent that cable operators can establish that they have not yet recovered the cost of such wiring, they would retain the right to collect reasonable compensation.

Under this approach, consumers would be able to obtain wire maintenance service on a competitive basis from either independent providers or cable operators. As is the case with telephone inside wiring, the ability of subscribers in

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[64] Compaq believes that subscribers' control of inside wiring is entirely practical. Indeed, as the Commission noted, some cable operators already provide subscribers with such rights. *See Notice* at ¶ 39.

[65] See *Detariffing the Installation and Maintenance of Inside Wiring*, Memorandum Opinion and Order, 1 FCC Rcd 1190, 1195 (1986) ("*Telephone Inside Wiring Reconsideration Order*"), *further recon.* 3 FCC Rcd 1719 (1988), *remanded, NARUC v. FCC*, 880 F.2d 422 (1989), Third Report and Order, 7 FCC Rcd 1334 (1992) ("*Telephone Inside Wiring Third Report and Order*").

multiple dwelling unit buildings to access wiring outside their dwelling unit "will depend on the contractual or other locally determined legal relationship with the multiunit property owner."[66]

Existing wiring: purchase upon termination. Cable subscribers in single unit residences or multiple dwelling unit buildings should have the right to acquire existing cable inside wiring upon voluntary termination of service.[67]

New wiring: subscriber ownership. Subscribers should have the right to own and maintain all inside wiring installed, or substantially modified, after December 31, 1997. Of course, cable systems should be permitted to offer wiring installation and maintenance services. If they do, however, they must be required to do so on an unbundled, non-regulated basis.

2. POLICY CONSIDERATIONS

Granting consumers the ability to control all inside wiring will provide significant public interest benefits. First, this approach will promote competition among multiple network service providers. Second, it will allow consumers to

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[66] *Review of Sections 68.104 and 68.213 of the Commission's Rules Concerning Connection of Simple Inside Wiring to the Telephone Network, Petition for Modification of Section 68.213 of the Commission's Rules Filed by the Electronic Industries Association*, Report and Order and Further Notice of Proposed Rulemaking, 5 FCC Rcd 4686, 4693 n.31 (1990).

[67] *See Implementation of the Cable Television Consumer Protection and Competition Act of 1992*, First Order on Reconsideration and Further Notice of Proposed Rulemaking, MM Docket No. 92-260 (rel. Jan. 26, 1996) ("*Cable Home Wiring Reconsideration Order*").

make the most efficient use of existing inside wire. Finally, eliminating network service providers' control over inside wiring will benefit consumers by creating a competitive market for new wiring.

a. MULTI-SERVICE COMPETITION

One of the Commission's overriding goals in this proceeding should be to facilitate consumers' ability to subscribe to the services of their choice. As the Commission has recognized, the current regulatory regime governing cable inside wiring in multiple dwelling unit buildings "may impede competition in the multichannel video programming delivery marketplace."[68] Indeed, there is substantial evidence in the record that cable operators' control over inside wiring already has restricted consumers' ability to access new or alternative services.[69]

If a cable system controls the inside wiring, it can deprive rival service providers of the ability to use that wiring to deliver services to consumers. As a result, if a cable subscriber wishes to switch to another service provider, the new service provider will be required to duplicate nearly all of the in-building existing

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[68] *Cable Home Wiring Reconsideration Order* at ¶ 31.

[69] In the *Cable Home Wiring* proceeding, the record of which has been incorporated into this proceeding, *see Notice* at 2 n.2, there is ample support for this conclusion. *See, e.g.*, Comments of Bell Atlantic at 2 (filed Dec. 1, 1992) ("[T]he cable wiring bottleneck acts as a barrier to entry by competing services . . . ."); Comments of the United States Telephone Association at 3 (filed Dec. 1, 1992) ("Today, many cable operators . . . refuse to open voluntarily the control they hold over broadband access to the home."); Comments of the Liberty Cable Company, Inc. at 4 (filed Dec. 1, 1992) ("Once a franchised cable operator exercises control over Cable Home Wiring, other competitors will be locked out of the market . . . .").

wiring.[70] This impedes competition by artificially increasing the competing service provider's cost. The prospect of having to wait until the rival service provider deploys its own wiring to the premises also may deter many consumers from switching.[71] In multiple dwelling units, moreover, building owners may be hesitant to permit deployment of additional drop lines that may disrupt hallway moldings and other amenities.

If cable subscribers control the inside wiring, however, they will be able to change service providers easily. In single residences, the new service provider will deliver its service to a point located no more than 12 inches inside the customer's premises. From there, the customer can easily access the service using existing inside wiring. In multiple dwelling units, a competing service provider will only have to install a new feeder line -- which generally will be able to run in the existing conduits alongside the incumbent cable provider's line. Subscribers will simply direct that their dedicated drop line be disconnected from the incumbent provider's feeder and connected to the new service provider's feeder. The benefits of user control over drop lines will increase substantially when, with the deploy-

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[70] Under current Commission rules, a new provider must run its own feeder line and duplicate drop lines to a point 12 inches outside each subscriber's premises.

[71] *See, e.g.*, Comments of the Liberty Cable Company, Inc. at 3 (filed Dec. 1, 1992) ("Liberty has found that a subscriber's enthusiasm for a competing service quickly dissipates if the subscriber perceives that he or she will encounter *any* difficulty in making the transition . . . .") (emphasis in original).

ment of digital technology, it becomes practical to use a single drop line to deliver simultaneously multiple services from competing providers.[72]

b. EFFICIENT USE OF FACILITIES

In the telephone market, subscribers have the right to remove, replace, rearrange and maintain inside wiring.[73] This has benefitted consumers by

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[72] In the *Notice*, the Commission seeks comment on the possibility of establishing the cable wiring demarcation point for multiple dwelling units at the point of minimum entry into a building. *See Notice* at ¶ 16. Under this approach *all* cable wiring inside the building would be considered inside wiring. This approach offers several potential benefits. Competing service providers could offer service more quickly and for less cost if they need only run cable to a minimum point of entry, rather than having to deploy their own lines within the building. In addition, this approach would reduce potential building disruption resulting from the deployment of additional wires. It also is consistent with the practice in the telephone market.

On balance, however, Compaq believes that setting the demarcation point at the location at which in-building cable wiring becomes dedicated to an individual subscriber is the more feasible alternative. Because cable service -- unlike telephony -- is delivered over common feeder wires, setting the demarcation point at the minimum point of entry would require that the building owner, rather than individual subscribers, own the inside wiring. With the building owner acting as an intermediary between the subscriber and the service provider, it could be more difficult for individual subscribers to change services. Moreover, this approach would require the building owner, rather than the service provider, to control the amplifiers and feeder wiring, which are substantial sources of potential signal leakage.

In the future, market and technical forces may make it efficient to deliver broadband services through a dedicated wire that runs from a minimum point of entry to the building to an individual subscriber's unit. If this becomes a reality, then application of Compaq's proposed "dedicated use" standard would result in the demarcation point being located at the minimum point of entry.

[73] *See Telephone Inside Wiring Reconsideration Order*, 1 FCC Rcd at 1195.

allowing them to deploy inside wiring in the manner that best meets their needs. Extending this right to cable inside wiring can be expected to have similar benefits.

As noted at the outset, Compaq believes that consumers will increasingly seek to deploy home local area networks ("Home LANs"), which will allow consumers to link together PCs and other premises-based "information appliances."[74] Compaq believes that, in many instances, existing cable inside wiring can serve as the backbone for Home LANs. Allowing consumers to control cable inside wiring will allow them to make the most efficient use of this existing resource, rather than having to run an additional set of wiring through their premises.

c. A COMPETITIVE INSIDE WIRING MARKET

As the Commission has recognized, its telephone inside wiring policies have benefitted customers "by increasing their communications options."[75] Recent years have seen the proliferation of competitive inside wiring providers. This has resulted in user-choice, innovation, and reduced prices.

Compaq believes that creation of a competitive market in broadband inside wiring will have the same effect. Indeed, as broadband becomes more widely deployed -- and premises-based LANs become more sophisticated -- the need for, and benefits of, innovative wiring installers and maintenance providers

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[74] *See supra* § I.A.

[75] *See Telephone Inside Wiring Third Report and Order*, 7 FCC Rcd at 1335 (citing *Detariffing the Installation and Maintenance of Inside Wiring*, Second Further Notice of Proposed Rulemaking, 5 FCC Rcd 3407 (1990)).